

REMARKS

Reconsideration and allowance of the present application is respectfully requested.

Drawings, Abstract and Specification:

Applicants thank the Examiner for his careful review of the specification. The Examiner has pointed out a minor discrepancy between numbering in the specification (at page 19, lines 7 and 8 of the specification) and numbering in Figure 2. (Office Action, ¶1, page 2) Applicants have addressed this inadvertent error by correcting the reference numerals in the specification (rather than amending the drawings). The Examiner's review and approval of this change in the specification is requested.

The Examiner has requested that the abstract be shortened to 150 words or less (Office Action, ¶2, page 2). Although the application was filed when the MPEP provided for abstracts of 250 words or less, the abstract is nonetheless shortened (as reflected in the Amendments to the Abstract section above). To avoid inadvertently deleting subject matter from the application, the text of the original abstract in its entirety is inserted into the end of the summary (as reflected in the Amendments to the Specification section above).

The Examiner has also noticed a minor discrepancy between text in Figure 4A and the text in the specification on page 15, line 10 (Office Action, ¶3, page 2). In response, Applicants have amended Figure 4A to correspond with the terminology of the specification. Replacement sheet 3/5 including amended Figure 4A is submitted. The Examiner's approval of the change is requested.

Other minor inadvertent informalities noted in paragraph 3 of the Office Action (Office Action, ¶3, page 2) have been addressed, as reflected in the Amendments to the Specification section, in accordance with the Examiner's suggestions. The Examiner's approval of such changes is requested.

No new matter has been introduced by any of the above amendments.

Claims:

Claims 22-28 are allowed. Applicants thank the Examiner for this recognition of patentable subject matter.

Claim 19 is rejected under 35 U.S.C. §112, second paragraph. The Office Action states: "[t]he claim seems to be incomplete." (Office Action, ¶5, page 3). The Examiner is thanked for his careful reading of the claim. Claim 19 is amended merely to correct this minor inadvertent clerical error, and such amendment does not relate to prior art. Therefore, withdrawal of this rejection is respectfully requested. Having addressed the only outstanding rejection of Claim 19, Applicants respectfully request reconsideration and allowance of Claim 19.

Claim 17 is objected to because the claim did not end with a period (Office Action, ¶6, page 3). The period has been added to correct this minor inadvertent typographical error. Such amendment does not relate to prior art. Therefore, withdrawal of the objection, and reconsideration and allowance of this claim (which the Office Action states on page 5 would be allowable if rewritten into independent form) is respectfully requested.

Claims 20 and 21

Claims 20 and 21 are rejected under 35 U.S.C. §102(b) as being anticipated by Probst (USP 5,982,899). The Office Action states:

With regard to claim 20, Probst discloses a programmable logic device maintaining, in non-volatile memory, a first key (column 5 lines 40-44). The key is used to decrypt configuration data (column 5 lines 44-45), which is used to configure the device (column 5 lines 58-61).

With regard to claim 21, the identifier number is added to the configuration data (column 5 lines 25-30).

(Office Action, ¶8, page 3). Applicants respectfully disagree and traverse the §102 rejection.

Nowhere does Probst either disclose or suggest a programmable logic device having a decryptor and configurable logic elements. Probst, in fact, relates to mainframe computer systems, such as the IBM System/390 (Probst, col. 6, lines 39-60), having external peripherals such as a hard disk (see, e.g., Probst, Fig. 4 and the corresponding text). There is no teaching or suggestion that the computer system of Probst is a programmable logic device. Furthermore, the Office Action does not allege any teaching in Probst that discloses a configurable logic element, as claimed by Applicants. In fact, Probst does not even mention the term "logic element" or any remotely similar term, much less teach the present invention. Therefore, since Probst does not disclose or even suggest the claimed invention, Applicants believe Claim 20 is allowable and respectfully request its allowance.

Claim 21 depends from Claim 20 and, thus, includes all of the limitations of Claim 20. Therefore, for at least the reasons given above with respect to Claim 20, Claim 21 is also allowable. Furthermore, the cited portion of Probst does not disclose a first key number identifying the first key in the non-volatile storage. In fact, there is no teaching or suggestion of any key number in Probst. Therefore, Applicants respectfully request allowance of Claim 21.

Claims 1, 2, 3, 11 and 16

Independent Claim 1 and dependent Claims 2, 11 and 16 are rejected under 35 U.S.C. §102(b) as being anticipated by Santon et al. (USP 5,058,162). The Office Action states:

With regard to claim 1 and 11, Santon discloses a programmable device maintaining a stored private key (column 3 lines 10-13), which is a device identifier (column 2 lines 12-20). The private key is used to decrypt a first encrypted key (column 3 lines 15-18). The first key is then used to decrypt received data files (column 3 lines 18-19). The device is then reconfigured with the data files (column 5,

lines 15-22). The definition of configuration, from Microsoft Computer Dictionary 5th edition, is the sum of a system's internal and external components. Thus reconfiguration occurs when software is added.

With regard to claim 2 and 16, Santon discloses the private key is stored in firmware (column 4, lines 17-21).

With regard to claim 3, Santon discloses a first key number (the encrypted first key) that is associated with the encrypted configuration data (It was used to encrypt it), and identifies itself as the key to be used to decrypt the configuration data.

(Office Action, ¶9, page 4). It appears that there is a typographical error in the Office Action and the remainder of this response is based on the assumption that the Examiner intended to include Claim 3 in this rejection. Applicants respectfully disagree and traverse the §102 rejection.

First, with respect to the Examiner's use of the word "configuration," Applicants respectfully point out that the Examiner has merely quoted a very small portion of a much longer definition for "configuration" set forth in the Microsoft Computer Dictionary in support of his arguments. Applicants believe this is inappropriate. Furthermore, it is unclear how the shortened definition being cited by the Examiner relates to the claimed elements. Clarification or withdrawal of the present rejection is therefore respectfully requested.

Claim 1 includes limitations relating to maintaining a device identifier and a private key in a programmable logic device, receiving a first encrypted key onto the programmable logic device, receiving onto the programmable logic device a bitstream, using the first key to decrypt the first encrypted configuration data, and configuring a first portion of the programmable logic device. Applicants respectfully submit that Santon does not teach or disclose such limitations. For example, Santon does not teach or disclose a programmable logic device. Santon, in fact, appears to deal merely with distributing computer software (see, e.g., Figure 1 of

Santon.), and merely discloses a "conventional minicomputer or microcomputer such as a Series 300 minicomputer manufactured and sold by Hewlett-Packard Company" (Santon, col. 7, lines 61-64). Nowhere is a programmable logic device or any similar device even mentioned in Santon. Therefore, Santon does not teach or disclose any of the method steps pertaining to programmable logic devices. The Examiner also seems to be inappropriately identifying only one element of Santon as both a private key and a device identifier in stating: "a stored private key . . . which is a device identifier."

Furthermore, there is no teaching or even suggestion in Santon of a bitstream, as claimed by Applicants. In fact, the Examiner has not alleged any teaching of a bitstream in Santon, and nowhere in Santon is the term bitstream or its equivalent even used, much less a bitstream comprising first encrypted configuration data. Therefore, the steps relating to a bitstream and a first encrypted configuration data are not disclosed or taught by Santon.

For these reasons, Applicants believe Claim 1 is allowable over Santon, and respectfully request allowance of the claim.

Each of Claims 2, 3, 11 and 16 depends from Claim 1 and, thus, includes all of the limitations of Claim 1. Therefore, for at least the reasons given above with respect to Claim 1, Claims 2, 3, 11 and 16 are also allowable, and Applicants respectfully request allowance of these claims.

Furthermore, with respect to Claims 2 and 16, the Examiner states that: "Santon discloses the private key is stored in firmware." Claims 2 and 16 relate to limitations where neither the device identifier nor the private key are rewritable. It is assumed that the Examiner meant to imply that storing a private key in firmware teaches such limitations, although the Examiner has not directly stated this implication. First, the Examiner does not allege, and Applicants do not find, that Santon discloses a device identifier that is not rewritable. Moreover, in a subsequent section of the Office Action, the Examiner takes official notice that "an EPROM storage element

is a form of firmware that is very cost effective if changes are ever required" (Office Action, ¶11, page 5) indicating that firmware can be modified or rewritten. This is wholly inconsistent and incompatible with the Examiner's earlier usage of the term firmware (that firmware is not rewritable). Applicants respectfully request that the Examiner either withdraw the rejections, or rectify this apparent inconsistency.

With respect to Claim 3, Santon does not disclose or teach a first key number, much less a bitstream comprising a first key number. Furthermore, Santon does not disclose or teach a first key number associated with the first encrypted configuration data, the first key being stored on the programmable logic device in association with the first key number. As stated earlier, Santon does not teach or even suggest a bitstream, first encrypted configuration data, or a programmable logic device. Therefore, for these additional reasons, Claim 3 is believed to be allowable, and Applicants respectfully request withdrawal of the rejection.

Claims 4-6

Dependent Claims 4-6 are rejected under 35 U.S.C. 103 as being unpatentable in view of Santon. The Office Action states:

With regard to claims 4-6, the examiner takes official notice that an EPROM storage element is a form of firmware that is very cost effective if changes are ever required, storing data in non-volatile memory can save processing time in case of power failure, and hardware decryptors work quickly. Santon does not disclose the exact hardware specifications, these are common types of storage and execution devices, and would be obvious to one of ordinary skill in the art to use to gain speed and efficiency.

(Office Action, ¶11, page 5.) Applicants respectfully traverse the §103 rejection.

Each of Claims 4-6 depends from Claim 1 and, thus, includes all of the limitations of Claim 1. Therefore, for at

least the reasons given above with respect to Claim 1, Claims 4-6 are also allowable, and Applicants respectfully request allowance of these claims.

The Examiner has attempted to take Official Notice of a definition. Applicants respectfully register their disagreement and request that the Examiner produce a reference supporting his assertions. The Examiner's statement that "an EPROM storage element is a form of firmware" is not correct. An EPROM (electrically programmable read only memory) is a memory structure. Firmware, on the other hand, is a type of program code. It may be possible to store firmware in a memory, but the memory itself may not be considered to be a type of firmware, and therefore a statement that "an EPROM storage element is a form of firmware" is inconsistent with those terms as they are used and understood by those of skill in the art.

Moreover, even accepting the Examiner's statements for the sake of argument, Applicants respectfully submit that the statements in the Office Action do not amount to a prima facie rejection under 35 U.S.C. §103. With respect to Claims 4-6, Applicants submit that the Office Action fails to point to a motivation or suggestion in the art to store a device identifier and a private key on a programmable logic device, fails to point to a motivation or suggestion in the art to store a first key on a programmable logic device, and fails to point to a motivation or suggestion in the art to include a hardware decryptor in a programmable logic device. As pointed out above, Santon does not disclose a programmable logic device or any similar device, and taking Official Notice "that an EPROM storage element is a form of firmware that is very cost effective if changes are ever required, storing data in non-volatile memory can save processing time in case of power failure, and hardware decryptors work quickly" does nothing to overcome this shortcoming. Therefore, Applicants respectfully request withdrawal of the rejection.

Claims 7-10, 12-15, 17, 18 and 29

The Office Action indicates that Claims 7-10, 12-15, 17 and 18 would be allowable if rewritten in independent form (Office Action, ¶12, page 5). Applicants thank the Examiner for this recognition of patentable subject matter. Each of Claims 7-10, 12-15, 17 and 18 depends either directly or indirectly from Claim 1, and therefore includes all of the limitations of Claim 1. For the reasons set forth above, Applicants believe Claim 1 is allowable. Therefore, for at least the same reasons, Applicants believe Claims 7-10, 12-15, 17 and 18 are also allowable and respectfully requests allowance of these claims.

Applicants have added dependent Claim 29, which depends from Claim 19. Since Claim 19 is believed to be allowable based on the foregoing reasons, Applicants respectfully request allowance of Claim 29.

Conclusion

No new matter has been added by any of the above amendments. In view of the foregoing amendments and remarks, Applicants submit that the entire application (Claims 1-29) is in condition for allowance. A Notice of Allowance is therefore respectfully requested. If the Examiner would like to discuss any aspect of this application, the Examiner is invited to contact the undersigned at (408) 879-4641.

Respectfully submitted,



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I hereby certify that this correspondence is being deposited with the United States Postal Service as first-class mail in an envelope addressed to: Commissioner for Patents, P.O. BOX 1450, Alexandria, VA 22313-1450, on December 31, 2003.

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Signature